

Print Instructions for Print Vendors (Paper Manuals)

PARTS MANUAL

TOTAL PAGE COUNT: Less than 80

- Paper Size:**
- 11 x 17
 - Body - 50 lbs brilliant white offset or equivalent.
 - Cover - on 80 lbs coated, pre-printed "grid" cover stock
(NOTE: If total order quantity is less than 100 pieces, use uncoated cover stock)
- Press:**
- Body - 1-color, 2-sided
 - Cover imprint - 1-color, 2-sided
- Bindery:**
- Fold & Staple (2X), Face Trim, 3-Hole Drill

TOTAL PAGE COUNT: 80 or greater

- Paper Size:**
- 8-1/2 x 11
 - Body - 50 lbs brilliant white offset or equivalent.
 - Cover - on 80 lbs coated, pre-printed "grid" cover stock
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- Press:**
- Body - 1-color, 2-sided
 - Cover imprint - 1-color, 2-sided
- Bindery:**
- Perfect Bind, Face Trim (3 knife), 3-Hole Drill

GENERAL

- COVERS:**
- Covers are located at the beginning of this package.
 - Back cover is the page IMMEDIATELY AFTER the front cover.
 - If supplied, the "Hardware Identification & Torque Specifications" is located IMMEDIATELY AFTER the back cover. This page MUST be printed on the INSIDE of the BACK cover.
 - Check the front cover for the individual part number (typically a 2xxxx or 182xxxx number).
 - Check the front cover for the document number (TP 4xx - xxxx - xx - xx - xx)
- BODY:**
- ODD number pages are ALWAYS right hand pages, and EVEN number are ALWAYS left hand pages.
- General:**
- **This instruction page is NOT part of the manual and must NOT be printed.**
 - Pages labeled with the text "THIS PAGE INTENTIONALLY BLANK" are placement pages ONLY, and should NOT be printed.

If you have any further questions regarding this manual, please contact Ken Cehonski in Ferris Industries Engineering Department at (315) 495-0100 ext. 249.

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Derby TM **Parts Manual**



The Pacer Walk Behind Mower

**Model:
HW1436**

Derby mowers are built by
Ferris Industries, a
Simplicity company.

Ferris Industries
5375 North Main Street
Munnsville, NY 13409
800-933-6175

1822418
Revision 01
Rev. Date: 1/2004
D-PAC-PAR-01



Ferris Industries

5375 North Main Street
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www.ferrisindustries.com

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Hardware Identification & Torque Specifications

Common Hardware Types

Hex Head Capscrew



Washer



Lockwasher

Carriage Bolt



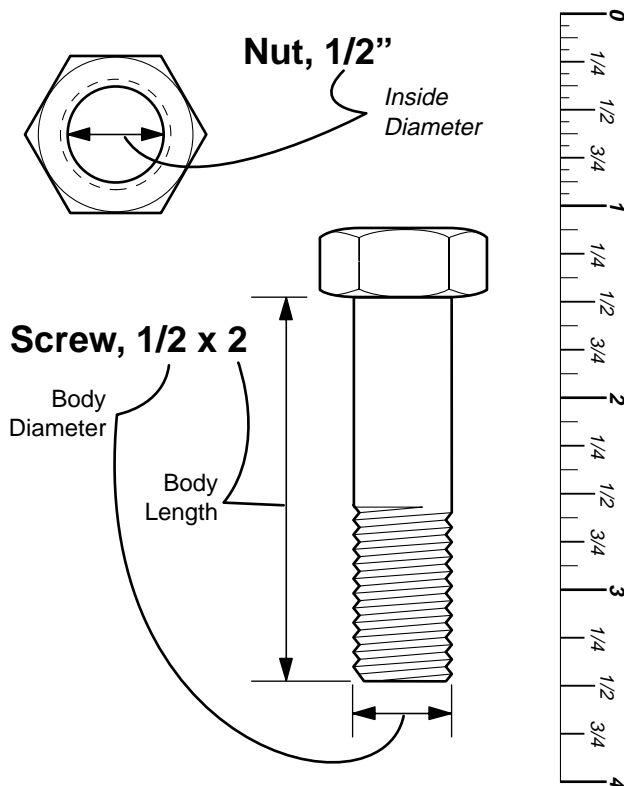
Hex Nut

Standard Hardware Sizing

When a washer or nut is identified as **1/2"**, this is the *nominal size*, meaning the *inside diameter* is 1/2 inch; if a second number is present it represents the *threads per inch*.

When a bolt or capscrew is identified as **1/2 - 16 x 2"**, this means the *nominal size*, or *body diameter* is 1/2 inch; the second number represents the *threads per inch* (16 in this example), and the final number is the *body length* of the bolt or screw (2 inches long in this example).

The guides and ruler furnished below are designed to help you select the appropriate hardware and tools.



Torque Specification Chart

FOR STANDARD MACHINE HARDWARE (Tolerance $\pm 20\%$)

Hardware Grade	No Marks SAE Grade 2		SAE Grade 5		SAE Grade 8	
	in/lbs ft/lbs	Nm.	in/lbs ft/lbs	Nm.	in/lbs ft/lbs	Nm.
8-32	19	2.1	30	3.4	41	4.6
8-36	20	2.3	31	3.5	43	4.9
10-24	27	3.1	43	4.9	60	6.8
10-32	31	3.5	49	5.5	68	7.7
1/4-20	66	7.6	8	10.9	12	16.3
1/4-28	76	8.6	10	13.6	14	19.0
5/16-18	11	15.0	17	23.1	25	34.0
5/16-24	12	16.3	19	25.8	27	34.0
3/8-16	20	27.2	30	40.8	45	61.2
3/8-24	23	31.3	35	47.6	50	68.0
7/16-14	30	40.8	50	68.0	70	95.2
7/16-20	35	47.6	55	74.8	80	108.8
1/2-13	50	68.0	75	102.0	110	149.6
1/2-20	55	74.8	90	122.4	120	163.2
9/16-12	65	88.4	110	149.6	150	204.0
9/16-18	75	102.0	120	163.2	170	231.2
5/8-11	90	122.4	150	204.0	220	299.2
5/8-18	100	136	180	244.8	240	326.4
3/4-10	160	217.6	260	353.6	386	525.0
3/4-16	180	244.8	300	408.0	420	571.2
7/8-9	140	190.4	400	544.0	600	816.0
7/8-14	155	210.8	440	598.4	660	897.6
1-8	220	299.2	580	788.8	900	1,244.0
1-12	240	326.4	640	870.4	1,000	1,360.0

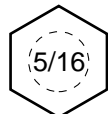
NOTES

- These torque values are to be used for all hardware excluding: locknuts, self-tapping screws, thread forming screws, sheet metal screws and socket head setscrews.
- Recommended seating torque values for locknuts:
 - For prevailing torque locknuts:
use 65% of Grade 5 torque.
 - For flange whizlock nuts and screws:
use 135% of Grade 5 torque.
- Unless otherwise noted on assembly drawings, all torque values must meet this specification.

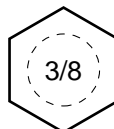
Wrench & Fastener Size Guide



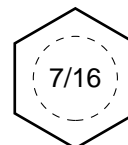
1/4" Bolt or Nut
Wrench—7/16"



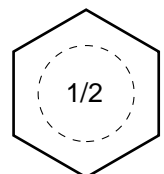
5/16" Bolt or Nut
Wrench—1/2"



3/8" Bolt or Nut
Wrench—9/16"



7/16" Bolt or Nut
Wrench (Bolt)—5/8"
Wrench (Nut)—11/16"



1/2" Bolt or Nut
Wrench—3/4"

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This Manual Covers The Following Products:

14HP WALK BEHIND MOWER	PAGES
HW1436 Pacer 14 HP Walker w/ 36" Mower	2-15

36" MOWER DECK	PAGES
HW1436 Pacer 14 HP Walker w/ 36" Mower	16-17

TRACTOR COMPONENTS

Engine Deck, Fuel Tank & Idler Group	2
Engine, PTO & Drive Group	4
Brake Group	6
Handle Bar Group	8
Transmission & Drive Tire Group	10
Electrical Group	12
Decals — Safety, Brand & Model	14

MOWER DECK COMPONENTS

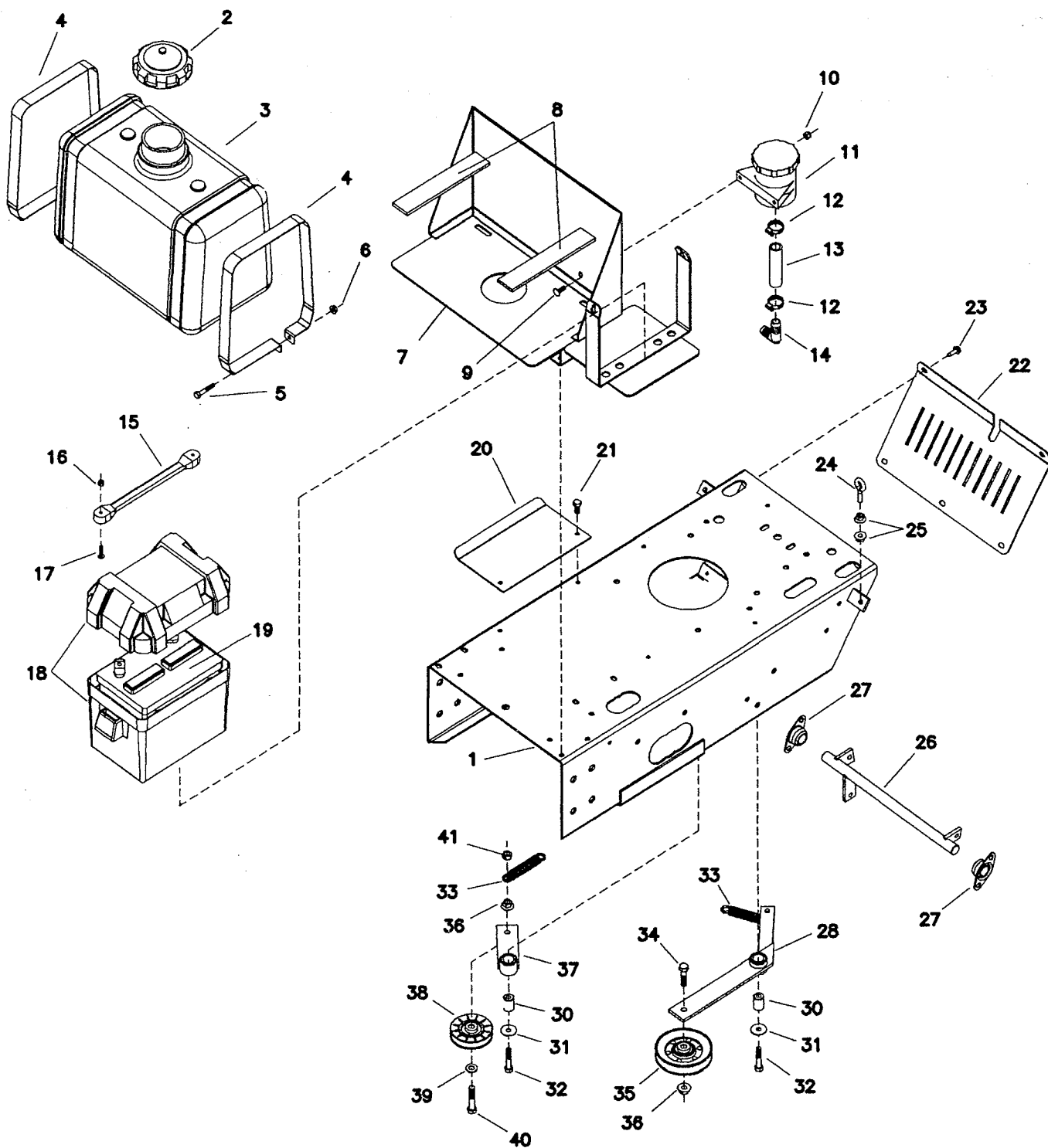
36" Mower Group	16
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REFERENCE INFORMATION:

Torque Specification Chart	Inside Back Cover
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Engine Deck, Fuel Tank & Idler Group

NOTE: Unless noted otherwise,
use the standard hardware torque
specification chart.



The above parts group applies to the following Model Nos.:

HW1436 Pacer 14 HP Walker w/ 36" Mower

Engine Deck, Fuel Tank & Idler Group

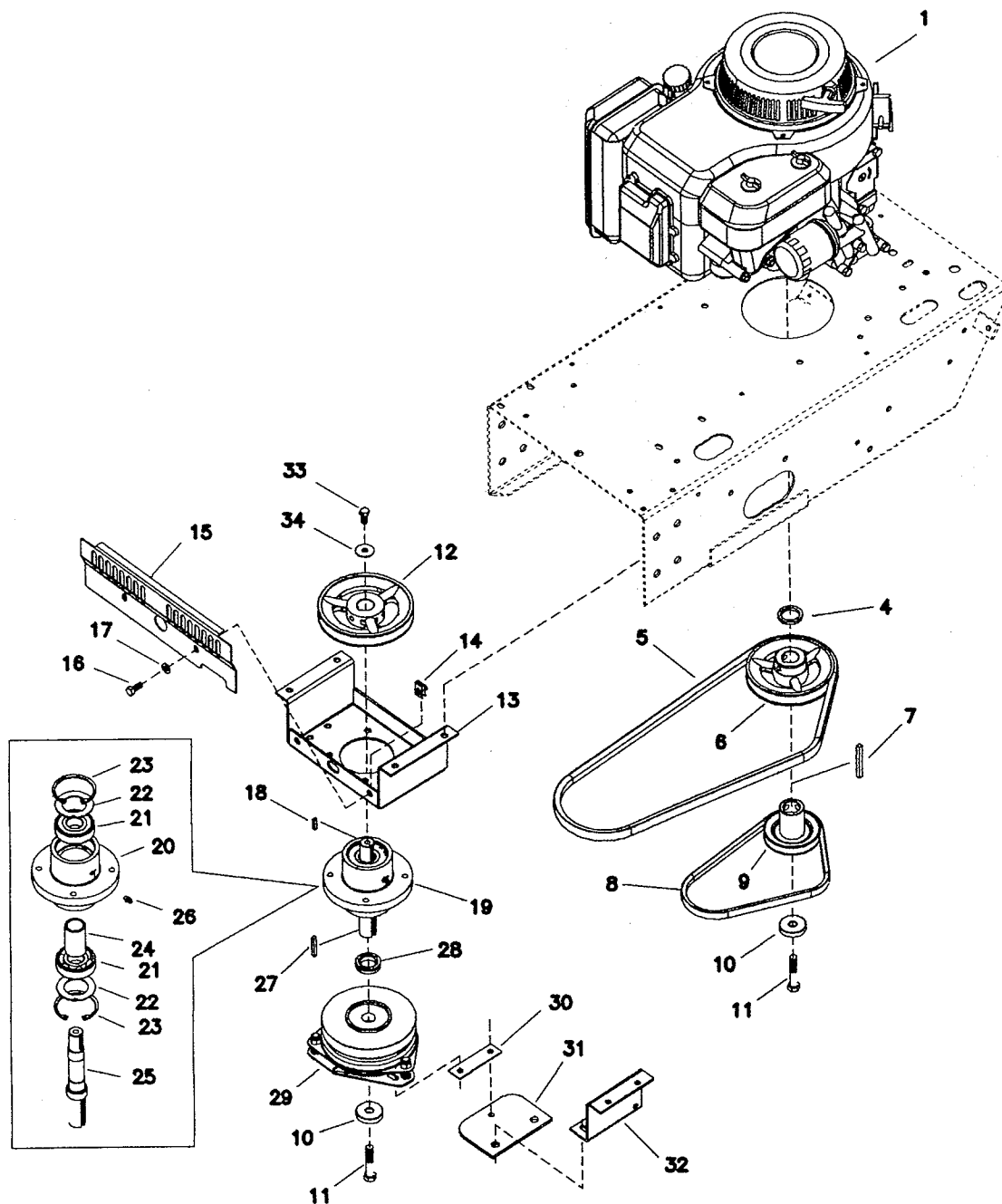
REF NO.	PART NO.	QTY.	DESCRIPTION
1	1831174	1	PACER ENGINE DECK
2	22158	1	CAP, Fuel Tank
3	21869	1	FUEL TANK, 5 Gallon
4	1844694	2	STRAP, Fuel Tank
5	25010-12	2	CAPSCREW, Hex Hd, 1/4-20 x 1-1/2
6	25126	2	NUT, Hex, Serrated Flange, 1/4-20
7	1845865	1	FUEL TANK MOUNT
8	21877	2	RUBBER PAD
9	25144-6	2	CARRIAGE BOLT, 1/4-20 x 3/4
10	25095	2	NUT, Hex, Nylon Lock, 1/4-20
11	21384	1	RESERVOIR, Hydraulic Oil
12	21164	2	HOSE CLAMP
13	50848-4	1	HOSE, 4"
14	21395	1	FITTING, 90 deg.
15	21670	1	RUBBER STRAP
16	25271	2	NUT, Hex, Nylon Lock, #10-24
17	25270	2	SCREW, Phillips, #10-24 x 1
18	21666	1	BATTERY BOX
19	22346	1	BATTERY
20	1842538	1	HEAT SHIELD
21	25011-6	2	CAPSCREW, Hex Hd, 5/16-18 x 3/4
22	1842641	1	SCREEN
23	25279-6	5	CAPSCREW, Hex Hd, Taptite, 1/4-20 x 3/4
24	25151-17	2	EYEBOLT
25	25139	4	NUT, Hex, Serrated Flange, 5/16-18
26	1842533	1	TRANSMISSION CONTROL SHAFT
27	21098	2	BEARING, Flange
28	1842917	1	IDLER ARM, Complete (Includes Ref 29)
29	20876B	2	BUSHING
30	42134	2	SPACER, Pivot
31	25164	2	WASHER, Fender, 5/16
32	25011-14	2	CAPSCREW, Hex Hd, 5/16-18 x 1-3/4
33	20807	2	SPRING, Extension
34	25013-12	1	CAPSCREW, Hex Hd, 3/8-16 x 1-1/2
35	43628	1	PULLEY, Idler
36	25128	2	NUT, Hex, Serrated Flange, 3/8-16
37	1842531	1	IDLER ARM, Complete (Includes Ref 29)
38	43627	1	PULLEY, Idler
39	25156	1	WASHER, 3/8
40	25013-16	1	CAPSCREW, Hex Hd, 3/8-16 x 2
41	25100	1	NUT, Hex, Nylon Lock, 3/8-16

The above parts group applies to the following Model Nos.:

HW1436 Pacer 14 HP Walker w/ 36" Mower

Engine, PTO & Drive Group

NOTE: Unless noted otherwise,
use the standard hardware torque
specification chart.



The above parts group applies to the following Model Nos.:

HW1436 Pacer 14 HP Walker w/ 36" Mower

Engine, PTO & Drive Group

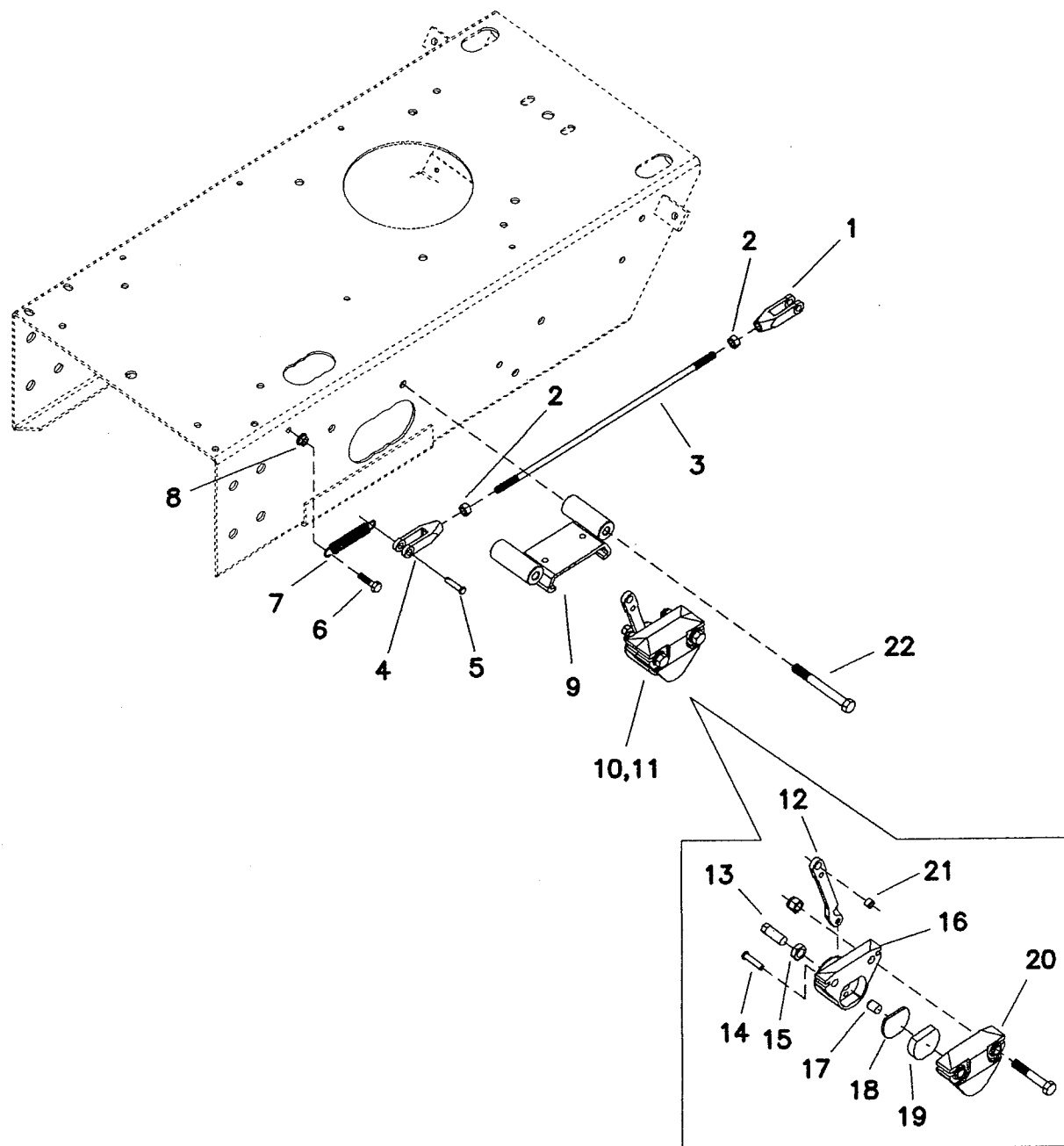
REF NO.	PART NO.	QTY.	DESCRIPTION
1	22335	1	ENGINE, 14 HP Kohler Electric Start
2	22336	1	MUFFLER (not shown)
3	22337	1	MUFFLER GUARD (not shown)
4	42620	1	SPACER, Crankshaft
5	21229	1	BELT (Jackshaft)
6	20816	1	PULLEY
7	50407-9	1	KEY, 1/4 x 2-1/2
8	21230	1	BELT (Transmission)
9	42597	1	PULLEY, Transmission Drive
10	42132	2	RETAINER, Clutch
11	45938	2	CRANKSHAFT BOLT
12	45643	1	PULLEY, Jackshaft Spindle
13	42591	1	JACKSHAFT MOUNT
14	22308	2	BODY CLIP, 5/16-18
15	1845367	1	JACKSHAFT GUARD
16	25011-6	2	CAPSCREW, Hex Hd, 5/16-18 x 3/4
17	25155	2	WASHER, 5/16
18	50403-1	1	KEY, 3/16 x 1
19	45479	1	JACKSHAFT SPINDLE ASSEMBLY, Complete (Includes Ref 20-26)
20	30468	1	HOUSING
21	20828	2	BEARING
22	44855	2	WASHER
23	20866	2	SNAP RING
24	45645	1	BEARING SPACER
25	45478	1	JACKSHAFT
26	20095	1	GREASE FITTING
27	50407-1	1	KEY, 1/4 x 1
28	45576	1	CLUTCH SPACER
29	21823	1	CLUTCH, Electric PTO
30	44674	1	STRAP
31	43636	1	PAD, Clutch Anchor
32	1845581	1	CLUTCH ANCHOR
33	25012-6	1	CAPSCREW, Hex Hd, 5/16-24 x 3/4
34	xxxxx	1	WASHER

The above parts group applies to the following Model Nos.:

HW1436 Pacer 14 HP Walker w/ 36" Mower

Brake Group

NOTE: Unless noted otherwise,
use the standard hardware torque
specification chart.



The above parts group applies to the following Model Nos.:

HW1436 Pacer 14 HP Walker w/ 36" Mower

Brake Group

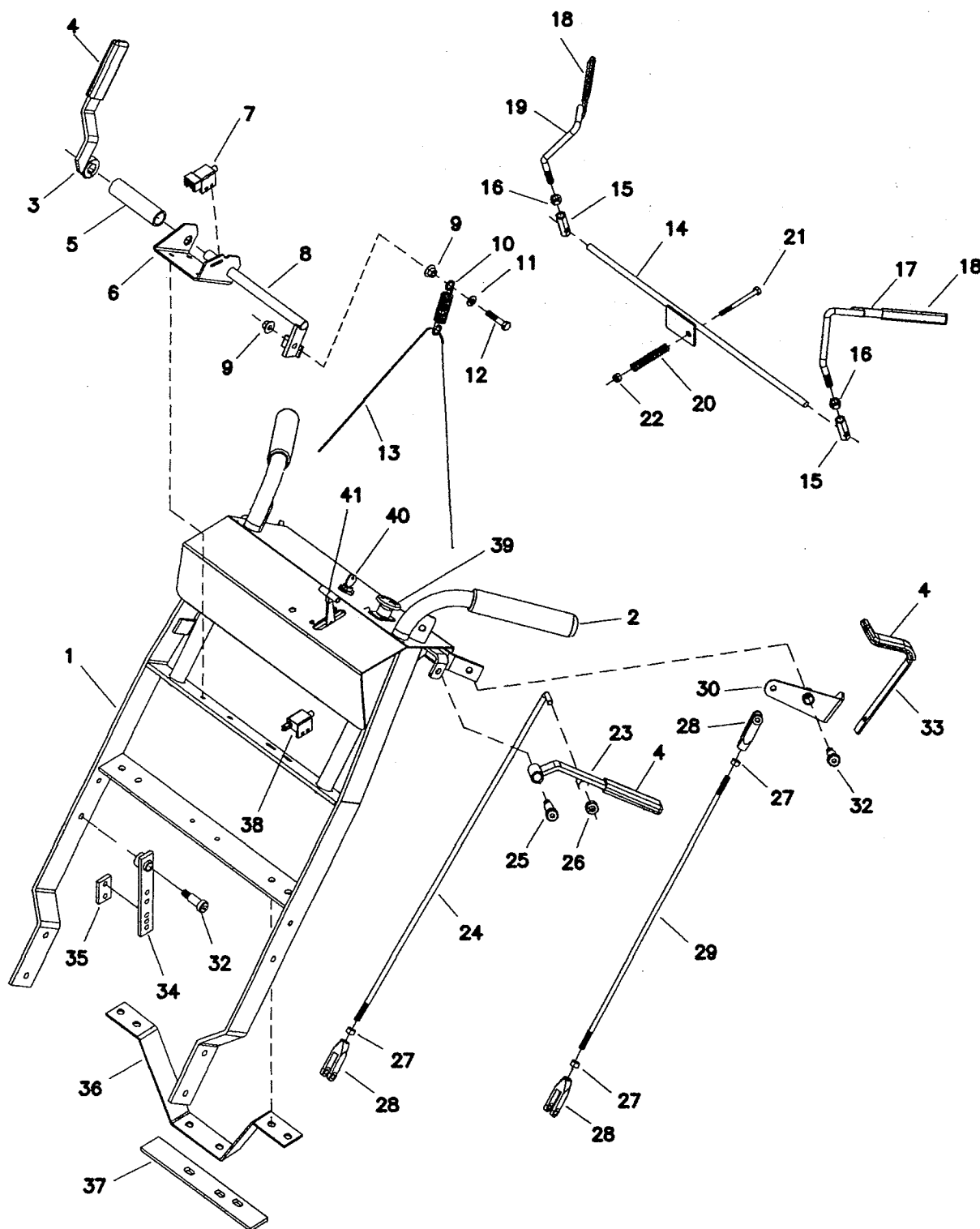
REF NO.	PART NO.	QTY.	DESCRIPTION
1	20979	2	CLEVIS, Plastic, 5/16
2	25035	4	NUT, Hex, 5/16-24
3	42555	2	BRAKE LINKAGE ROD
4	20980	2	CLEVIS, Steel, 5/16
5	25217-7	2	CLEVIS PIN, 1/4 x 7/8
6	25010-8	2	CAPSCREW, Hex Hd, 1/4-20 x 1
7	20639	2	SPRING, Extension
8	25126	4	NUT, Hex, Serrated Flange, 1/4-20
9	1842595	2	BRAKE CALIPER MOUNT
10	20968	1	CALIPER, LH (Includes Ref 12-20)
11	20969	1	CALIPER, RH (Includes Ref 12-20)
12	21038	2	LEVER
13	21473	2	ADJUSTER BOLT
14	21471	2	LEVER PIN
15	21472	2	JAM NUT
16	*****	2	BRAKE HOUSING (unavailable for replacement parts)
17	21470	2	ACTUATOR PIN
18	21335	2	BACK PLATE
19	21010	2	BRAKE PAD
20	21088	2	ANVIL
21	21878	2	SPACER
22	25013-28	4	CAPSCREW, Hex Hd, 3/8-16 x 3-1/2

The above parts group applies to the following Model Nos.:

HW1436 Pacer 14 HP Walker w/ 36" Mower

Handle Bar Group

NOTE: Unless noted otherwise,
use the standard hardware torque
specification chart.



The above parts group applies to the following Model Nos.:

HW1436 Pacer 14 HP Walker w/ 36" Mower

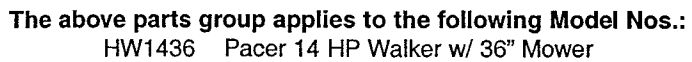
Handle Bar Group

REF NO.	PART NO.	QTY.	DESCRIPTION
1	1845480	1	HANDLE BAR ASSEMBLY
2	20837	2	GRIP, Foam
3	1844625	1	BRAKE HANDLE, Complete (Includes Ref 4)
4	25510	5	GRIP, Foam
5	45477	1	BRAKE SHAFT COVER
6	1845575	1	BRAKE HANDLE MOUNT
7	22095	1	SWITCH, Brake
8	1845584	1	BRAKE HANDLE SHAFT
9	25139	2	NUT, Hex, Serrated Flange, 5/16-18
10	21242	1	SPRING, Extension
11	25155	1	WASHER, 5/16
12	25011-12	1	CAPSCREW, Hex Hd, 5/16-18 x 1-1/2
13	50832-3	1	BRAKE CABLE
14	1843424	1	SWITCH ROD
15	43417	2	HEX ADJUSTER
16	25034	2	NUT, Hex, 5/16-18
17	1845485	1	HANDLE, Operator Presence, RH, Complete (Includes Ref 18)
18	21490	2	GRIP, Vinyl
19	1845484	1	HANDLE, Operator Presence, LH, Complete (Includes Ref 18)
20	20637	1	SPRING, Compression
21	25010-24	1	CAPSCREW, Hex Hd, 1/4-20 x 3
22	25095	1	NUT, Hex, Nylon Lock, 1/4-20
23	1841982	2	BRAKE HANDLE, Complete (Includes Ref 4)
24	42547	2	BRAKE HANDLE ROD
25	25220	2	SHOULDER BOLT, 1/2 x 1-1/2
26	20047	2	COLLAR, 5/16 Set
27	25033	6	NUT, Hex, 5/16-24
28	20979	6	CLEVIS, Plastic, 5/16
29	42554	2	THUMB CONTROL ROD
30	1845483	1	CONTROL PIVOT, RH
31	1845482	1	CONTROL PIVOT, LH (not shown)
32	25223	4	SHOULDER BOLT, 1/2 x 1
33	1842614	2	THUMB CONTROL LEVER, Complete (Includes Ref 4)
34	1842648	2	BRAKE PIVOT
35	42624	2	CABLE CLAMP
36	1842623	1	SUPPORT, Handle Bar
37	1842682	1	SUPPORT, Engine Deck
38	21769	1	SWITCH, Operator Presence
39	22180	1	SWITCH, PTO
40	20927	1	SWITCH, Ignition
41	20811	1	CABLE, Throttle

The above parts group applies to the following Model Nos.:

HW1436 Pacer 14 HP Walker w/ 36" Mower

NOTE: Unless noted otherwise, use the standard hardware torque specification chart.



Transmission & Drive Tire Group

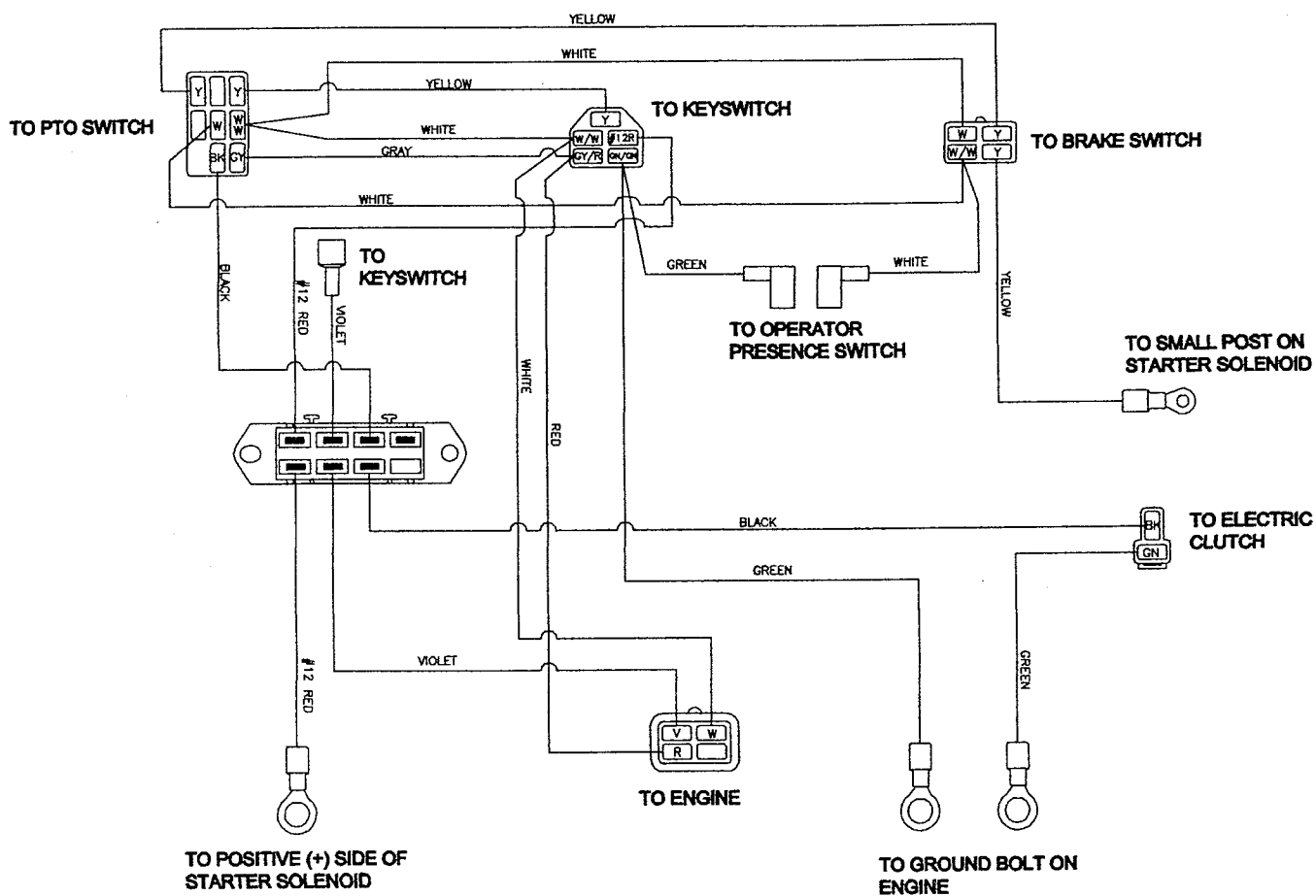
REF NO.	PART NO.	QTY.	DESCRIPTION
1	21469	1	TRANSMISSION, Hydrostatic
2	21084	1	KEY, Woodruff
3	21476	1	PULLEY, Transmission Input
4	21081	1	FAN
5	44577	2	RETAINER, Fan
6	25268	1	CAPSCREW, Allen Head w/ Loctite Patch, 1/4-20 x 1-3/4
7	25269	1	CAPSCREW, Allen Head w/ Loctite Patch, 1/4-20 x 1-1/2
8	1842537	1	CONTROL ARM
9	20149	1	KEY, Woodruff
10	21170	2	BALL JOINT, 5/16
11	42924	1	HYDRO LINKAGE ROD
12	20979	1	CLEVIS, Plastic, 5/16
13	42551	1	NEUTRAL LINKAGE ROD
14	21004	1	SPRING, Compression
15	1842550	1	NEUTRAL BRACKET
16	20637	1	SPRING, Compression
17	20047	1	COLLAR, 5/16 Set
18	1842638	1	TRANSMISSION RELEASE ROD
19	20639	1	SPRING, Extension
20	42636	1	RELEASE VALVE EXTENSION
21	21469-1	1	FITTING, 90 deg.
22	21164	2	HOSE CLAMP
23	50848-8.25	1	HOSE, 8-1/4
24	50407-9	2	KEY, 1/4 x 2-1/2
25	1842646	2	SUPPORT, Mount
26	25011-8	4	CAPSCREW, HEX Hd, 5/16-18 x 1
27	1844734	1	TRANSMISSION MOUNT
28	25018-24	8	CAPSCREW, Hex Hd, 1/2-20 x 3
29	42526	2	BRAKE DISC
30	42618	8	HUB SPACER
31	25098	8	NUT, Hex, Nylon Lock, 1/2-20
32	42590	2	DRIVE HUB
33	21207	2	DRIVE TIRE
34	20601	8	LUG NUT
35	20928	2	SHIM
36	21210	2	SNAP RING

The above parts group applies to the following Model Nos.:

HW1436 Pacer 14 HP Walker w/ 36" Mower

Electrical Group

NOTE: Unless noted otherwise,
use the standard hardware torque
specification chart.



The above parts group applies to the following Model Nos.:

HW1436 Pacer 14 HP Walker w/ 36" Mower

Electrical Group

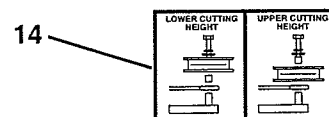
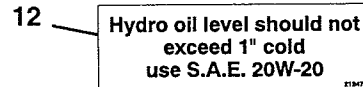
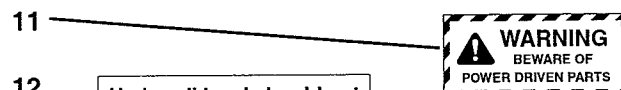
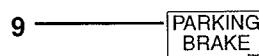
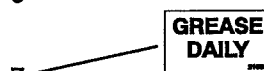
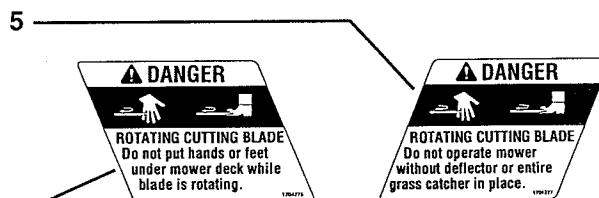
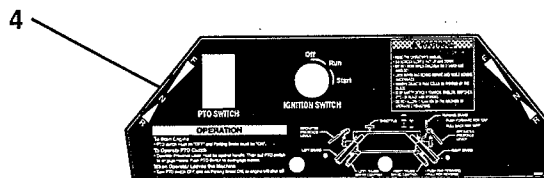
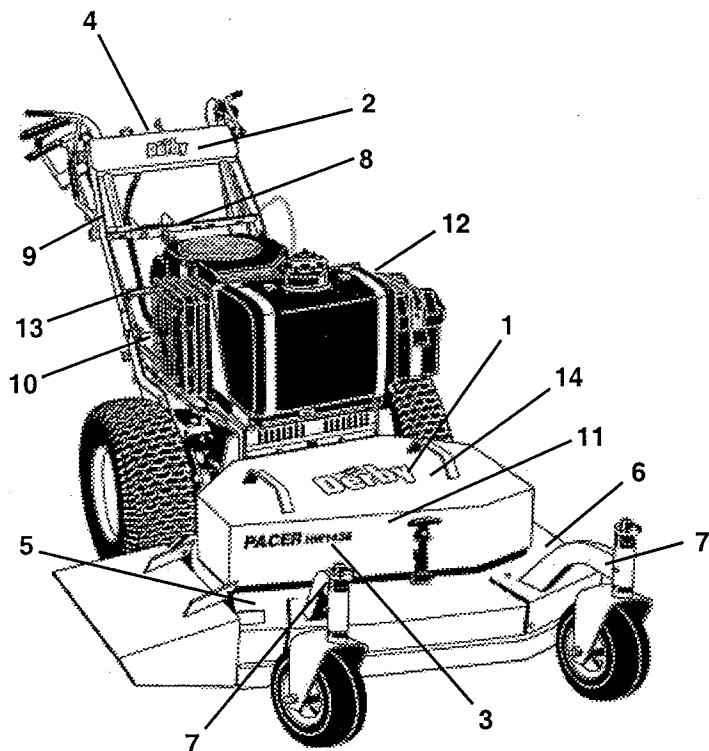
REF NO.	PART NO.	QTY.	DESCRIPTION
1	45897	1	HW1436 WIRE HARNESS
2	20927	1	SWITCH, Ignition
3	22180	1	SWITCH, PTO
4	21769	1	SWITCH, Operator Presence
5	22095	1	SWITCH, Brake
6	20801	1	SOLENOID
7	44876	1	CABLE, Positive Battery
8	44471	1	CABLE, Starter
9	21295	1	BOOT (on ends of starter cable)
10	45894	1	CABLE, Negative Battery
11	21603	4	FUSE, 20 amp

The above parts group applies to the following Model Nos.:

HW1436 Pacer 14 HP Walker w/ 36" Mower

Decals - Safety, Brand & Model

NOTE: Unless noted otherwise, use the standard hardware torque specification chart.



Note: Decals are NOT shown to scale.

The above parts group applies to the following Model Nos.:

HW1436 Pacer 14 HP Walker w/ 36" Mower

Decals - Safety, Brand & Model

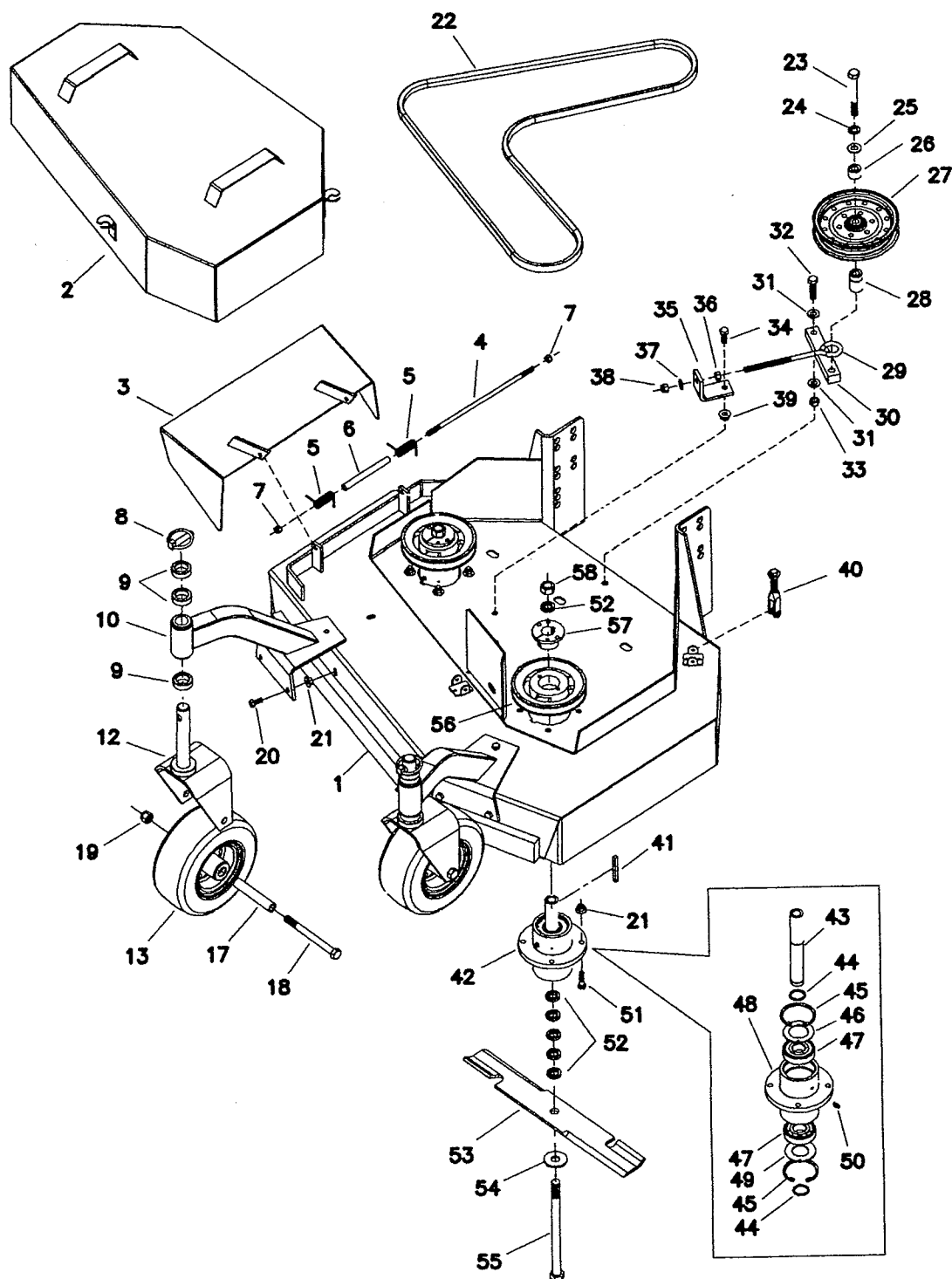
REF NO.	PART NO.	QTY.	DESCRIPTION
1	45517	1	DECAL, Derby Logo
2	45512	1	DECAL, Derby Built By Ferris
3	45518	1	DECAL, Pacer
4	45564	1	DECAL, Pacer Operation
5	1704277	1	DECAL, Danger (Chute In Place)
6	1704276	1	DECAL, Danger (Hand Under Deck)
7	21036	2	DECAL, Grease Daily
8	21167	1	DECAL, Patent
9	21246	1	DECAL, Parking Brake
10	45563	1	DECAL, Transmission Release
11	20037	1	DECAL, Warning (Located under mower guard)
12	21247	1	DECAL, Oil Level (Located above oil reservoir)
13	21818	1	DECAL, Warning
14	22199	1	DECAL, Pulley Position (Located under mower guard)

The above parts group applies to the following Model Nos.:

HW1436 Pacer 14 HP Walker w/ 36" Mower

36" Mower Group

NOTE: Unless noted otherwise,
use the standard hardware torque
specification chart.



The above parts group applies to the following Model Nos.:

HW1436 Pacer 14 HP Walker w/ 36" Mower

36" Mower Group

REF NO.	PART NO.	QTY.	DESCRIPTION
1	1821162	1	36" MOWER HOUSING
2	1845868	1	36" MOWER GUARD
3	1842565	1	DISCHARGE CHUTE
4	45914	1	CHUTE PIVOT ROD
5	1705080	2	SPRING, Torsion
6	45638	1	SPACER, Spring
7	25045	2	NUT, Hex, Nylon Lock, 5/16-18
8	20655	2	LYNCH PIN
9	41476	6	SPACER, Caster
10	1843887	2	CASTER MOUNT ARM, Complete (includes Ref 11 & 50)
11	21541	4	BUSHING, Flange
12	1841702	2	CASTER TIRE MOUNT
13	21181	2	CASTER TIRE, Complete (includes Ref 14, 15 & 16)
14	21181-1	2	TIRE
15	21181-2	2	TUBE
16	21181-3	2	HUB w/ BEARINGS
17	41657	2	CASTER AXLE
18	25017-44	2	CAPSCREW, Hex Hd, 1/2-13 x 5-1/2
19	25056	2	NUT, Hex, Nylon Lock, 1/2-13
20	25011-6	6	CAPSCREW, Hex Hd, 5/16-18 x 3/4
21	25139	14	NUT, Hex, Serrated Flange, 5/16-18
22	21251	1	BELT
23	25018-28	1	CAPSCREW, Hex Hd, 1/2-20 x 3-1/2
24	25173	1	WASHER, Lock, 1/2
25	25158	1	WASHER, 1/2
26	45577	1	SPACER, Idler, Short
27	21976	1	PULLEY, Smooth
28	45578	1	SPACER, Idler, Long
29	21811	1	EYEBOLT
30	1844610	1	IDLER ARM
31	25157	2	WASHER, 7/16
32	25016-14	1	CAPSCREW, Hex Hd, 7/16-20 x 1-3/4
33	25094	1	NUT, Hex, Nylon Lock, 7/16-20
34	25013-8	1	CAPSCREW, Hex Hd, 3/8-16 x 1
35	1845491	1	EYEBOLT ANCHOR
36	25034	1	NUT, Hex, 3/8-16
37	25156	1	WASHER, 3/8
38	25096	1	NUT, Hex, Nylon Lock, 3/8-16
40	60078	3	GUARD HOLD DOWN
41	50407-9	2	KEY, 1/4 x 2-1/2
42	30301	2	SPINDLE ASSEMBLY, Complete (Includes Ref 43-50)
43	41480	2	SPINDLE SHAFT
44	20864	4	SNAP RING
45	50866	4	SNAP RING
46	41653	2	WASHER, Top
47	20828	4	BEARING
48	30293	2	HOUSING
49	41672	2	WASHER, Bottom
50	20095	4	GREASE FITTING
51	25011-10	8	CAPSCREW, Hex Hd, 5/16-18 x 1-1/4
52	41477	12	SPACER, Blade
53	21227	2	BLADE
54	25159	2	WASHER, 5/8
55	25019-76	2	CAPSCREW, Hex Hd, 5/8-11 x 9-1/2
56	20814	2	PULLEY, Spindle
57	20819	2	HUB
58	25040	2	NUT, Hex, 5/8-11

The above parts group applies to the following Model Nos.:

HW1436 Pacer 14 HP Walker w/ 36" Mower